

CLAIMS:

1. A stripe wise iterative symbol detection method for detecting symbol values of a data block recorded along an N-dimensional channel tube, N being at least 2, on a record carrier of a set of symbol rows, one dimensionally evolving along a first direction and being aligned with each other along at least a second of N-1 other directions, said first direction together with said N-1 other direction constituting an N-dimensional lattice of symbol positions, wherein a stripe is a subset of a row and at least one neighboring row, the iteration of said stripe wise iterative symbol detection comprises:
 - estimating the symbol values in a first stripe, using a search based algorithm, a side information derived from a row adjacent to the first stripe, the side information being used in the estimation of said symbol values, characterized in that a weighing of a contribution of the side information is assigned based on a reliability of the side information
2. A stripe wise iterative symbol detection method as claimed in claim 1, characterized in that the contribution is a contribution to an objective function of the search based algorithm.
3. A stripe wise iterative symbol detection method as claimed in claim 2, characterized in that the search based algorithm comprises the use of contributions internal to the stripe and that the use of the internal contributions comprises assigning an individual weighing of the internal contributions
4. A stripe wise iterative symbol detection method as claimed in claim 1, 2 or 3, characterized in that the search based algorithm is a Viterbi algorithm, a sequential decoding algorithm such as a stack algorithm or a Fano algorithm, or a soft-decision output algorithm such as a (Max)(Log)MAP algorithm.
5. A stripe wise iterative symbol detection method as claimed in claim 4, characterized in that the side information is an estimated channel input symbol

6. A stripe wise iterative symbol detection method as claimed in claim 4, characterized in that the side information is likelihood information about a channel input symbol.
- 5 7. A stripe wise iterative symbol detection method as claimed in claim 5 or 6, characterized in that a further side information, derived from the row adjacent to the first stripe, is being used in the estimation of said symbol values.
- 10 8. A stripe wise iterative symbol detection method as claimed in claim 7, characterized in that the further side information comprises channel output values.
9. A stripe wise iterative symbol detection method as claimed in claim 8, characterized in that the channel output values are filtered channel output values
- 15 10. A stripe wise iterative symbol detection method as claimed in claim 1, 2, 3, 4, 5, 6, 7, 8 or 9, characterized in that a weighing of the contribution of the side information is highest for side information derived from a symbol detection with a highest reliability.
- 20 11. A stripe wise iterative symbol detection method as claimed in claim 11, characterized in that the symbol detection with the highest reliability is a symbol detection from a previous iteration.
12. A stripe wise iterative symbol detection method as claimed in claim 10 or 11, characterized in that the weighing is based on a distance between a position of a symbol value to be detected and a position of a side information symbol position
- 25 13. A stripe wise iterative symbol detection method as claimed in claim 12, characterized in that the distance is a distance to a most reliable side information position
- 30 14. A stripe wise iterative symbol detection method as claimed in claim 10, 11, 12, or 13, characterized in that the weighing of the contribution of the side information is different for the second detector compared to the first detector

15. A stripe wise iterative symbol detection method as claimed in claim 10, 11, 12, 13 or 14, characterized in that the weighing of the contribution of the side information is different for a second iteration compared to a first iteration.

5 16. A stripe wise iterative symbol detection method as claimed in claim 15, characterized in that the weighing of the contribution of the side information is higher for the second iteration compared to the first iteration.

10 17. A stripe wise iterative symbol detection method as claimed in claim 10, 11, 12, 13 or 14, characterized in that the side information is obtained from a row comprising data which is highly protected using redundant coding.

15 18. A stripe wise iterative symbol detection method as claimed in claim 10, 11, 12, 13, or 14, characterized in that the side information is obtained from a row comprising predefined data.

19. A stripe wise iterative symbol detection method as claimed in claim 17, characterized in that the row comprising data which is highly protected using redundant coding is a guard band

20 20. A stripe wise iterative symbol detection method as claimed in claim 17, characterized in that the row comprising data which is highly protected using redundant coding is located centrally between the rows forming the set of symbol rows.

25 21. A stripe wise iterative symbol detection method as claimed in claim 19, characterized in that the N-Dimensional channel tube is delimited by one or more guard bands.

22. A stripe wise iterative symbol detection method as claimed in claim 19, characterized in that side information is derived from each guard band of the one or more guard bands

30 23. A symbol detector comprising a first detector comprising estimation means for estimating symbol values in a first stripe, receiving means for receiving side information

derived from at least one row adjacent to the first stripe, coupled to the estimation means for providing said side information to the estimation means for use in the estimation of said symbol values and output means for providing further side information,
and a second detector comprising further estimation means for estimating symbol values in a
5 second stripe, further receiving means for receiving side information derived from the output of the first detector coupled to the further estimation means for providing said side information to the further estimation means for use in the estimation of said symbol values from the second stripe.

10 24. A playback device comprising a symbol detector as claimed in claim 23

25. A computer program using one of the methods of the claims 1 to 22